November 7, 2002

Ms. Toni Ehrlich
100 Pomona Avenue
El Cerrito, CA 94530

Subject: Comments on Sunset View Cemetery Project

Dear Ms. Ehrlich:

I am writing in response to your letter to Julian Elliot of my staff dated October 29, 2002, in which you submit comments on the District's proposed permit condition change that would allow additional cremations at the Sunset View Cemetery.

I have enclosed written responses to each of your specific comments. You have also requested that the District: (1) hold a Public Hearing on this permit application, (2) extend the public comment period for another 60-90 day period, and (3) complete a full Environmental Impact Report (EIR) for the project.

We have decided to extend the public comment period for this project until December 6, 2002. We have received very limited comments on this project and do not feel a longer extension of the comment period, nor a Public Hearing, is warranted. In addition, a full EIR is not required under CEQA for this ministerial project.

We appreciate your comments on this proposed project. If you have any questions regarding this matter, please feel free to contact me at (415) 749-4971. Please contact Brian Bateman of my staff at (415) 749-4653 if you have any questions regarding the enclosed responses to your specific comments.

Sincerely,

Peter Hess
Deputy Air Pollution Control Officer

PH:BB:bb

Responses to Oct. 29, 2002 Comment Letter from Toni Ehrlich
Regarding Sunset View Cemetery Permit Application #2995

1. The mercury emission estimates the District used to evaluate health risks are invalid.

Although we believe that the mercury emission rate used in our analysis is appropriate and conservative, even if the higher emission estimates that you suggest were used, the maximum health risks would still be within levels considered acceptable.

You correctly point out that the mercury emission factor used in the District's Health Risk Screening Analysis is not the highest such factor reported in the literature. The emission factor used was intended to represent long-term average, rather than short-term maximum, emissions. Long-term average emissions are appropriate for estimating chronic cancer and non-cancer health risks, which are based on full lifetime exposures.

The emission factor used takes into account information regarding the decreased use of mercury amalgam in favor of alternative dental restorative materials, and the reduced frequency of dental caries in the population (using statistics regarding the age of death and the number of dental fillings by age). The factor used is still quite conservative for estimating long-term mercury emissions because it does not take into account reductions in the size of dental caries that have occurred in the population, nor any future increases in the use of non-mercury dental restorative materials, which are highly probable.

It is important to note that even if the highest mercury emission figures that you provide in your letter (3.4 lb pounds per year) was used in the analysis, the maximum estimated chronic health risks would still be only about 10 percent of the level that may result in permit denial under the District's Risk Management Policy (i.e., a chronic hazard index of 1.0).

The District has also evaluated the potential for acute (i.e., short-term) health effects based on the maximum hourly emission rate of mercury from the facility using the highest published CARB and EPA emission factor of 0.0049 lb/body. The maximum one-hour air concentration of mercury was determined to be 0.6 $\mu g/m^3$, which is about one-third of the acute Reference Exposure Level (REL) of 1.8 $\mu g/m^3$ established by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA). RELs are designed to protect the most sensitive individuals in the population by the inclusion of margins of safety. The acute REL for mercury incorporates a safety factor of 1000.

2. The District did not consider the emissions, particularly dioxins, resulting from incinerating items in addition to cadavers (e.g., plastic body parts, tubes, and catheters).

The emissions from the relatively low quantities of these types of items combusted are not expected to be significant.

The emission factors that were used for dioxin (and other toxic compounds, except for mercury) were based on a source test conducted for a typical cremation in which combusted material included the cadaver, four pounds of cardboard, up to six pounds of wood, and an unspecified amount of plastic wrapping. Much less frequently, combusted materials may also include more substantial cremation containers, some personal effects of the deceased, and a small amount of chlorinated plastic material (e.g., pouches utilized for disease control). Most prostheses are removed prior to cremation. You may want to refer to Section 8344.5 of the California Health and Safety Code, and information provided by the Cemetery and Funeral Bureau of the California Department of Consumer Affairs, regarding materials that may be combusted during cremations (e.g., see http://www.dca.ca.gov/cemetery/funeral.htm#cremation).

Although emissions data specific to crematoria do not exist for the combustion of these additional materials, emissions can be estimated from source test results on incinerators burning medical or municipal solid waste. For example, the dioxin emissions associated with burning 1.25 tons of medical waste (corresponding to an average of 5 pounds of additional material burned for 500 cremations) in an uncontrolled incinerator is about 5 micrograms TEQ_{DF} per year (using the average emission factor derived by EPA/ORD for eight tested uncontrolled medical waste incinerators). The maximum lifetime cancer risk associated with exposure to these emissions (and the emissions of other toxic compounds similarly estimated) at the Sunset View facility is about 0.25 in one million. The increase in maximum chronic non-cancer hazard index is about 0.01. These figures confirm that the combustion of a limited quantity of additional materials during cremation is not likely to significantly increase health risks.

3. The individuals that live, work, or attend school near the facility should be offered blood tests for mercury and tests for dioxins, and should be interviewed to establish their health histories.

The health risk screening analysis completed for the facility indicates that these actions are not warranted.

The background exposure levels for dioxin and mercury from other sources are much higher (i.e., hundreds of times higher) than the maximum estimated exposures resulting from the facility's emissions. For example, EPA has estimated the average background exposure level to dioxin for individuals in the general population to be about 40 pg/day TEQ_{DF}, due predominately to dietary intake. This is about 800 times greater than the estimated maximum average exposure from the facility's dioxin emissions. The figures are similar when comparing estimated average background exposure levels of mercury to the estimated maximum average exposure from the facility's mercury emissions (background exposures have been estimated by EPA to include 2 to 20 µg/day of elemental mercury vapors from an individual's own dental fillings, and about 7 µg/day of methyl mercury from fish ingestion). Based on this information, it is very unlikely that exposure to the facility's dioxin or mercury emissions could be detected relative to these much more significant sources of exposure.

4. Many countries require abatement of crematories, as the submitted information indicates.

The District will evaluate the information that you submitted prior to permit issuance to determine if our Best Available Control Technology (BACT) determination for crematories should be updated.

The District also requires abatement of emissions from crematories. We assume that your comment refers to emission controls that are more stringent than what is required as BACT in the Bay Area and the other California air districts. We will review the material that you have submitted prior to permit issuance to determine whether our BACT determination is appropriate.